

عنوان مقاله:

Optimal control of pitch angle in Hybrid Wind Solar system using Colonial Competitive Algorithm

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خلاصه مقاله:

it is clear that the amount of the conventional energy sources is confined and they may cause fundamental problems with the pollution of the environment during their usage. The European Union intends to achieve about 20 percent rate of the renewable energy sources in the energy production until 2020. Because of the importance of this topic, in this work a hybrid energy generation system containing PV array and Wind turbine has been analyzed. This system, in addition to being more efficiency from the conventional sources, it also has superiority rather than the wind turbine and PV array sporadic. One of the most appliances of adjusting the aerodynamic torque at times when the wind speed overcome to the rated speed is the control of pitch angle in wind turbine. Formally, pitch control system usually employ PI controller, the mathematical model of the system should be described exactly. In this paper, a meta-heuristic technique is utilized to optimal control of the pitch angle. Experimental results showed the superiority of the proposed algorithm toward the compared GA method.

کلمات کلیدی:

Power generation, Wind turbine, Photovoltaic, Genetic algorithm, pitch angle

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